UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/652,302	08/28/2000	Robert W. Mah	ARC-14231-2	2337

25186   7590   02/01/2002

NASA AMES RESEARCH CENTER
ATTN: PATENT COUNSEL
MAIL STOP 202A-3
MOFFETT FIELD, CA 94035-1000

EXAMINER
MCCROSKY, DAVID J

ART UNIT	PAPER NUMBER
3736	

DATE MAILED: 02/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No. 09/652,302		**Applicant(s)** MAH, ROBERT W.
Office Action Summary	**Examiner** David J. McCrosky		**Art Unit** 3736

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5* .   6) ☐ Other: .

DETAILED ACTION

Claim Objections

Claims 1-16 are objected to because of the following informalities: if

"OR(λ;meas)" in line 13 of claims 1 and 9 is meant to be an abbreviation for measured

optical reflectance, then the entire abbreviation should read "(OR(λ;meas))"; "combines"

in line 2 of claim 3 should read "combined". Appropriate correction is required.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Ham

et al. Ham et al disclose a fiber optic probe for spectroscopic analysis. See abstract

and column 23, lines 43-65. The reference further teaches a neural network that

compares sample data with a reference model. See column 8.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5 and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Gevins in view of Ham et al. Gevins teaches a system and method that aligns MRI

data with the data taken by an electrode or probe. See column 5, lines 51-56. Gevins

further teaches 1) measuring the size and shape of the patient's head and 2) measuring

the skull thickness using an ultrasonic probe. See columns 2 and 13. A neural network

is used to process the information and compare shapes. See column 5, lines 8-20 and

Figure 3. However, the neural network of Gevins does not contain training such that

when a sample does not fall into the model it updates the model. Ham et al disclose a

system and method that contains such a neural network. See column 8. It would have

been obvious to one of ordinary skill in the art at the time the invention was made to

modify the system and method of Gevins, by programming the neural network to update

the model, in order to enhance the signal processing.

Referring to claims 3 and 11, Gevins discloses incorporating other characteristics

such as eye and body movements, behavior and physiological data. See column 4, line

65 to column 5, line 3.

Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Gevins in view of Ham et al as applied to claims 1-5 and 9-13 above, and further in view

of Tumer et al. Gevins and Ham et al disclose a system and method as recited in

claims 1-5 and 9-13. The combination does not teach the use of a neural network that

is a radial basis function neural network. However, Tumer et al teach an apparatus and

method using a probe and a radial basis function neural network for fluorescence

spectroscopy data analysis. See abstract. It would have been obvious to one of

ordinary skill in the art at the time the invention was made to modify the combination of

Gevins and Ham et al by utilizing a radial basis neural network, as disclosed in Tumer et

al, in order to further enhance classification accuracy.

Claims 7, 8, 15 and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Gevins in view of Ham et al as applied to claims 1-5 and 9-13 above, and further in view of Panescu et al. Gevins and Ham et al disclose a system and method as recited in claims 1-5 and 9-13. The combination does not teach the use of a neural network that is a back-propagation model. Panescu et al teach a system and method using probes for locating and sensing an element in a body. See column 1. The system uses a back-propagation neural network to analyze data. See column 20, lines 11-21. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Gevins and Ham et al by utilizing a back-propagation neural network, as disclosed in Panescu et al, in order to further enhance classification accuracy.

Referring to claims 8 and 16, Panescu et al disclose a steering mechanism and locating probes. See column 23, lines 20-25 and column 24, lines 20-24.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Verrier et al disclose a system and method for prediction of cardiac death using a neural network and a Doppler probe. Ho et al disclose the use of probes with a neural network to map a tumor. Pologe et al disclose a neural network to analyze pulse oximeter data from an infrared probe.
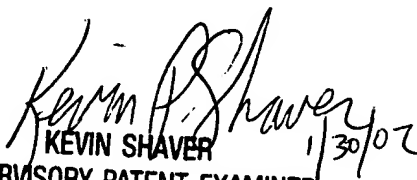
Any inquiry concerning this communication or earlier communications from the examiner should be directed to David J. McCrosky whose telephone number is 703-305-1331. The examiner can normally be reached on Mon-Fri 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Eric Winakur can be reached on 703-308-3940. The fax phone numbers for

the organization where this application or proceeding is assigned are 703-308-0758 for

regular communications and 703-308-0758 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is 703-308-

0858.

DJM
January 25, 2002

KEVIN SHAVER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700